CLAIMS

1	1. A device for detection of straight-line segments in a stream of digital									
2	data which are supplied at a pixel frequency and which are representative of an image (m, n)									
3	in which the contour points of said image are identified, said device comprising:									
4	- means for storing the stream of digital data in the form of successive									
5	lines, each of n data items,									
6	- a buffer circuit comprising:									
7 8	 registers for successive reading of the digital data to be processed, 									
9	 registers for storing the results of the processing of the digital 									
10	data that are representative -of the coordinates of the extremity									
11	points and of the orientation of the straight-line segments,									
12	 and working registers, 									
13	 a management module receiving a clock signal that is representative of 									
14	the pixel frequency of supply of the digital data, said management module being linked to the									
15	storage means and to the buffer circuit and being adapted, on the one hand, to manage the									
16	padding and the processing at the pixel frequency of the digital data in the storage means,									
17	and on the other hand the reciprocal exchange of data between said storage means and the									
18	buffer circuit,									
19	- a programmed calculation module for performing tests intended for the									
20	processing of the digital data in the reading registers,									
21	- and a sequencer which receives a clock signal that is representative of									
22	the pixel frequency and which is adapted, as a function of the results supplied by the									
23	calculation module, to control the management module and the buffer circuit with a view to									
24	the transfers of data between said buffer circuit and the storage means.									
1	2. The detection device as set forth in claim 1, wherein the storage means									

comprise three block memories each capable of storing a line of n digital data items, the

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- 3 management module being adapted to control a circular permutation of said memory blocks
- 4 which is capable of permitting the storage of n data items in a block memory and
- simultaneously the processing of the data contained in the other two block memories.
 - 3. The detection device as set forth in claim 1, said device comprising a calculation module which receives the results stored in the storage registers and representative of the orientations of the straight-line segments detected and which is programmed to calculate the histogram of said orientations.
- 5 4. A device for detection of straight line segments of an image, 6 comprising:
 - a storage module configured to store a stream of data representing a plurality of successive lines of pixels of the image;
- a calculation module configured to:

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- compare data representing first, second, third, and fourth pixels of the image,
- determine, from the compared data, whether any of the first, second, third, and fourth pixels are contour point pixels of the image, and, in a case where there are two contour point pixels among the first, second, third, and fourth pixels,
 - determine whether the two contour point pixels conform to selected parameters, relative to each other; and
 - a sequencer module configured, in a case where the two contour point pixels conform to the selected parameters, to store location coordites of the one of the two contour point pixels that occurs earlier in the stream of data to a position in the stream of data representing the other of the two contour point pixels.
- 5. The device of claim 4, further comprising a buffer module configured to hold the data representing the first, second, third, and fourth pixels of the image during a calculation, and to hold data representing results of the calculation.
- 24 6. The device of claim 4 further comprising a memory configured to store 25 the selected parameters.

26	7.	The	device	of	claim	4	further	comprising	a	management	module
27	configured to provi	de a c	lock sig	nal	corresp	one	ding to a	rate of flow	of	pixels in the s	tream of
28	data.										

- 29 8. The device of claim 4 further comprising an additional calculation 30 module configured to calculate a histogram of straight line segments occurring in the image.
- 9. A device for detection of a straight line segment of an image, comprising:

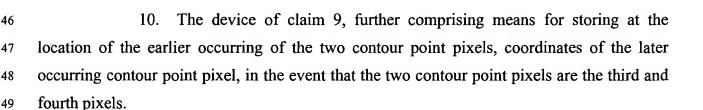
means for selecting a first group of first, second, third, and fourth contiguous pixels of the image, the first and second pixels from a first line of pixels, the third and fourth pixels from directly beneath the first and second pixels, respectively, in a second line of pixels;

means for determining whether any of the first, second, third, or fourth pixels are contour point pixels of the image;

means for comparing, in a case where two of the first, second, third, and fourth pixels are contour point pixels, the two contour point pixels;

means for determining whether the two contour point pixels fall within selected parameters relative to each other; and

means for storing, at the location of the later occurring of the two contour point pixels, coordinates of the earlier occurring contour point pixel, if the two contour point pixels fall within the selected parameters relative to each other.



11. The device of claim 9 wherein the means for comparing are configured to compare the first pixel to the fourth pixel, the second pixel to the third pixel, the second pixel to the fourth pixel, and the third pixel to the fourth pixel.



12. The device of claim 9 wherein the means for selecting include means for selecting a second group of first, second, third, and fourth contiguous pixels of the image, wherein the first and third pixels of the second group are the same pixels as the second and fourth pixels, respectively, of the first group.